

REMARKS

Claims 1 – 10 and 12 – 21 are in the application and are presented for consideration. By this amendment, Applicant has revised the claims to more clearly highlight the important combination of features according to the invention. Claim 11 has been canceled with features of claim 11 included in the independent claims. Further, new claims 20 and 21 have been added.

Claims 10 and 14 have been rejected under 35 USC § 112 as being indefinite. These claims have been revised to address the issues raised.

Claims 1 – 3, 7, 8, 11, 12, 13 and 15 have been rejected under 35 USC § 102 (b) as being anticipated by EP 00731185 A1 to Vokura (EP 185). The rejection is based on the position that EP 185 discloses each of the features as claimed.

The invention as set forth in the claims as presented provides a machining device with a transport means in the form of a multiaxial robot. Such multiaxial robots typically have six axes of rotational movement. As highlighted in the independent claims, the multiaxial robot that forms the transport device has multiple axes of rotation with a robot hand end. A carrier provided in the form of a shaft or girder is connected at the robot hand end. On the carrier there is mounted an independently movable multiaxial machining unit with a robot hand end having a jointing tool (a tool for joining, such as welding clamping hearing, namely for joining one piece to another). This is a especially advantageous for working on so-called cubic workpieces, namely workpieces that have a structure that defines an interior. With the invention, the carrier is transported by the multiaxial robot transport means within the interior

of the workpiece and the one or more movable multiaxial machining units can perform jointing work on the interior of the workpiece. This provides a structural combination which is different from the prior art and which also achieves results which are not provided by the prior art.

EP 185 discloses an arrangement with vertical beams 9 supporting a horizontal beam 1 that can be raised and lowered. On this horizontal beam 1 articulated robot arms 2 are provided. The arms 2 can move laterally as shown by arrow 3 and the robots are multiaxial robots, with these appearing to have five axes of rotation. However, based on the transport means which provides simple linear movement, it is not possible for the transport means to effectively transport the robots 2 into the interior of a workpiece. Functionally, the structure taught by EP 185 does not provide functions similar to those of the claimed device. Further, EP 185 is lacking a transport device with multiaxial rotational motion with a robot hand which supports a carrier, which carrier in turn supports a multiaxial machining unit. The invention further provides that the multiaxial machining unit has a hand with jointing tools. This combination is not suggested by the prior art as a whole. Accordingly, Applicant respectfully requests that the rejection be removed and that the revised claims be favorably considered as presented. The amended claims highlight the important combination according to the invention. Although the prior art discloses various articulated devices with tools, the prior art fails to suggest the crux of the invention. Accordingly, reconsideration of the rejection is requested in view the claims as presented.

Claims 1, 2, 5 – 7 and 11 have been rejected under 35 USC § 102 (b) as being anticipated by US 4, 323, 758 to Vokura (Vokura 758). The rejection is based on the position

that Vokura 758 discloses each of the features claimed. However, the reference fails to teach and fails to suggest the combination of features as set forth in the claims as now presented.

Vokura 758 discloses a welding device with two or more multi-articulated holders for welding guns or pincher welding guns provided on a beam. The beam is in turn movable with the least 2 degrees of freedom. The base structure or pedestal 1, which supports the beam structure 3 is not a multiaxial robot. Instead, this can be moved up in down and can be pivoted. This structure does not provide the function of inserting the beam into a cubic type workpiece, namely this cannot insert the beam into a three-dimensional space delimited by structure of the workpiece. Instead, Vokura 758 provides the features such that workpieces with multiple or symmetrical seams can be simultaneously welded. The basic concepts of moving two welding tools as proposed by Vokura 758 does not provide teachings or suggestions with regard to the combination of features as claimed. The invention provides functional attributes which are not contemplated by the prior art. The combination of features of the invention is not suggested by the prior art including Vokura 758. Accordingly, Applicant requests that the rejection based on Vokura 758 be reconsidered in view of the amended claims. Each of the claims highlights the multiple rotational axes of the transport device, with robot hand end, which allows the carrier to be placed into a workpiece that has structural features that define an interior space. This cooperates with the carrier having multiaxial machining units with a hand end having jointing tools. This combination is not suggested by the prior art including Vokura 758.

Claims 1, 3, 10, 13, 14 and 16 – 19 have been rejected under 35 USC § 102 (b) as being anticipated by US 2002/0007548 (Stoewer et al.). The rejection is based on the position

that Stoewer et al. discloses each of the features as claimed.

Stoewer et al. discloses an apparatus with a base unit or support arm stand 10 carrying a support arm 12 that has a support arm guide 11. The support arm stand 10 is carried on a movable longitudinal guide rail 25. Accordingly, the transport device is not a multiaxial robot. More importantly, Stoewer et al. provides a device which is not capable of positioning the support arm 12 within a cubic type workpiece. In particular, there is no ability to position a carrier within an interior space defined by structural parts of a workpiece with this positioning resulting in a multiaxial machining device being within the workpiece itself. Only the invention provides these advantages. The prior art including Stoewer et al. fails to teach and fails to suggest the combination of features claimed. The claims highlight the multiaxial robot that forms the transport device and has multiple axes of rotation with a robot hand end. A carrier as a shaft or girder is connected at the robot hand end. On the carrier there is mounted independently movable multiaxial machining units each with a robot hand and having a jointing tool (a tool for joining, such as welding clamping hearing, namely for joining one piece to another). This allows the carrier to be transported by the multiaxial robot transport means within the interior of the workpiece and the one or more movable multiaxial machining units can perform jointing work in the interior of the workpiece. As the prior art fails to teach and fails to suggest the combination of features as claimed, it is requested that this rejection be reconsidered and that the claims as now presented be favorably considered.

Claims 1, 2, 4, 7 and 9 – 11 have been rejected under 35 USC § 102 (b) has being anticipated by DE 10 0 17 897 (Tuenkers). The rejection is based on the position that Tuenkers

discloses each of the features as claimed. In few of the revised claims come or reconsideration of the rejection is requested.

Tuenkers discloses a framework system with cylindrical tubes (2, 3) interconnected in different planes at different angles. However, Tuenkers fails to teach and fails to suggest the combination of features including a multiaxial robot that forms the transport device and has multiple axes of rotation with a robot hand end with a carrier as a shaft or girder connected at the robot hand end wherein on the carrier there is mounted independently movable multiaxial machining units each with a robot hand end having a jointing tool (a tool for joining, such as welding clamping hearing, namely for joining one piece to another). This allows the carrier to be transported by the multiaxial robot transport means within the interior of the workpiece and the one or more movable multiaxial machining units can perform jointing work in the interior of the workpiece. As the prior art fails to teach and fails to suggest the combination of features as claimed, it is requested that this rejection be reconsidered and that the claims as now presented be favorably considered.

Applicant requests consideration of references which have been cited in European Application in a search report recently issued.

JP 2000 – 190265 discloses a multiple manipulator system with three branching arms. The reference does not disclose the features as discussed above.

JP 08 – 001558 discloses a robot with a distance detection part 18 and a calculation part. This reference does not disclose the combination of features as discussed above.

JP 59 – 214590 discloses a plural armed multi-freedom manipulator robot wherein a pay

part of the robot has plural branching arms. Although this arrangement provides flexibility, the reference does not teach the combination of features as discussed above.

Consideration of the references is requested.

Favorable consideration of the claims is now presented is requested. Further in favorable action on the merits is requested.

Respectfully submitted
for Applicant,



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Attached: PTO/SB/08a form
copies of (3) References and (2) English Abstracts

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